Experimental Inquiry

Developing and testing explanations of things we observe
(11 of 13 thinking/reasoning skill processes)

Creating a Performance Task

Step 1: Identify a content standard to be taught.

Step 2: Select thinking/reasoning skill processes.

Step 3: Write a 1st draft of the task incorporating steps 1 and 2.

Step 4: Identify standards from Learner Performance goals (LLL) to be included and revise task to make these standards explicit.

Step 5: Identify what kind of product/performance will be produced, add it to the performance task description.

Teaching a Thinking Skill

- □ Introduce skill, give several examples, and discuss its performance (when, where, how to use it).
- □ Explain mental processes to do the thinking, model the process.
- □ Let students practice the skill several times using personal, easy to understand content.
- □ Put the skill into the context of your academic content.
- □ Model, model, model!

Questions the Process Helps Explore

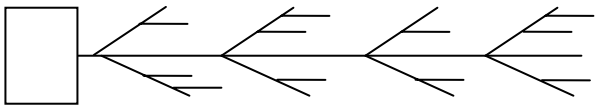
- □ What do I see or notice?
- □ How can I explain it?
- □ Based on my explanation, what can I predict?
- □ How can I test my prediction?
- □ What happened? Is it what I predicted? Do I need to try a different explanation?

Steps in the Process

1. Observe something that interests you and describe what has occurred.
2. Explain what you have observed. What theories or rules could explain what you have observed?
3. Based on your explanations, make a prediction.
4. Set up an experiment or activity to test your prediction.
5. Explain the results of your experiment in light of your explanation. If necessary, revise your explanation.

Optional Graphic Organizers

Fish Bone



Thinking Skill: Analyzing

Checklist

- □ What do I see or notice?
- □ How can I explain it?
- □ What if…?
- □ How can I test my "what if"?
- □ What happened?

Example

Many of the people who attended college or began to raise a family in the 1960s are now in their fifties. What are some things you have noticed about people who entered adulthood in the 1960's as compared to previous generations? Describe and explain your observation, then make a prediction based on your explanation and test it.